Discussion Draft
Evaluating the Conservation Strategies
Proposed Approach

June 27, 2007

Introduction from the Workgroup. The Conservation Strategies Workgroup has reviewed the general approach to the evaluation, as developed by the SAIC team, and supports its general approach and its referral to the Steering Committee. However, during the discussion of the approach at the workgroup meeting on Monday, June 25th, several issues were voiced about the written description. In order to maintain progress, the Work Group authorized the SAIC team to undertake some additional modifications to the proposal and to forward it as modified to the Steering Committee for its review and approval on June 29th. The description below is the result of that effort, and has been shared electronically with the Workgroup Members at the close of business Tuesday, June 26th. Each of the workgroup members reserves the right to comment further or offer additional suggestions as may be warranted, but also has supported proceeding as described.

Purpose: The Conservation Strategies Workgroup, under the direction of the Steering Committee, has developed four potential Conservation Strategy Options (Options) to be considered as whole or parts of the Conservation Strategies Framework. The Workgroup is recommending to the Steering Committee that SAIC conduct a comparative evaluation of the Options to assess their relative potential toward meeting criteria developed to address biological, planning, flexibility, and resource impact concerns. Given significant unknowns regarding the relative importance of the multitude of stressors affecting Covered Species, the evaluation will be largely qualitative and based upon the judgment of the SAIC team. One important component of the evaluation will be to assess the flexibility of the Options to adapt to the growing knowledge of the Bay-Delta's complex ecological and hydraulic interplays over time. SAIC will also utilize coarse modeling of an assumed range of hydrodynamic circumstances to provide a comparative basis from which to evaluate the conservation and water supply potential of the four Options. The product of this evaluation is intended to provide a level of information sufficient to help guide the Steering Committee toward selection of a final set of strategies to be incorporated into the Conservation Strategies Framework, which will serve as the basis for development of the details necessary to form the Bay Delta Conservation Plan.

Working Assumptions

Evaluation Criteria. The heart of the evaluation will compare the relative ability of the Options to meet the criteria developed for the Conservation Element Bundles Evaluation, which address specific objectives under four general categories covering biological, planning, flexibility-durability-sustainability, and other resource impacts. These criteria are attached. SAIC will work with the Conservation Strategies Workgroup to identify if any modifications should be made to these criteria, and will winnow down those criteria as may be warranted, given the level of information available and the purposes of this comparative evaluation. The Steering Committee will approve the criteria to be used in the evaluation.

Evaluative Considerations. The Workgroup has identified several stressors that are believed to be affecting Covered Species. SAIC has previously conducted several technical working sessions to develop draft working tables reflecting unweighted lists of known and potential stressors, impact mechanisms, potential life stage vulnerability, and conceptual conservation measures. These tables were prepared without assessing the relative importance and likelihood of the effects of the stressors nor the likely effectiveness or feasibility of the conceptual measures. SAIC will continue to work with the Workgroup to refine these tables and to rank the importance of the stressors relative to severity, geographic and temporal scope, and certainty. In conducting the Options comparison, SAIC will consider the importance of the stressors in relation to the ability of each of the Option to adapt to changing circumstances, and the uncertainties associated with those projections. Other tools, such as DRERIP conceptual models and published literature, as available, will be used in the evaluation as appropriate.

Operational Parameters. For purposes of providing a comparative basis from which to conduct this evaluation, SAIC will develop a range of flow variables at different locations in the Delta in order to assess the relative ability of the Options to meet the evaluative criteria. These ranges may be expressed either as water volumes or flow targets such as # cubic feet per second, or as operational parameters such as "open/closed", or physical location of a particular parameter (e.g. X2), and will not necessarily be tied to existing standards or other regulatory parameters. These variables and locations are described in the List of Flow Parameters to Support CS Options Evaluation, which will be distributed separately.

The assumed range of flow variables do not and are not intended to represent the actual flow characteristics that Steering Committee Members or their organizations may advocate as suitable and appropriate operational parameters for any particular Option that may be incorporated into the Conservation Strategies Framework later during the planning process. They are merely to be developed by SAIC to aid in a comparative evaluation of the differing Options at this early stage of the planning process. The SAIC report will seek to clearly describe how the SAIC team derived these ranges and their intended function to assist in the evaluation.

The Steering Committee will approve the assumed range of flow variables to be used in the evaluation.

Coarse Modeling. The SAIC Team will also undertake several coarse hydrodynamic modeling runs of the Options based upon a range of flow variables and to help evaluate the ability of the Options to meet the evaluative criteria under different water year conditions. This coarse modeling will also help evaluate the ability of the Options to meet both ecological and water supply parameters under a range of conditions. This coarse modeling will be for these comparative purposes only. SAIC anticipates that this preliminary modeling will be supplanted down the line with more finely calibrated modeling that may utilize other hydrological parameters than those employed at this stage as may be warranted to help in the evaluation of the broader Bay Delta Conservation Plan.

Options Evaluation Report. The SAIC team will prepare an Options Evaluation Report that:

1. summarizes the results of the evaluation;
2. describes the purpose of the report;
3. describes the configuration of the Options and key underlying assumptions;
4. describes the evaluation methods;
5. describes the results of the evaluation for each Option;
6. compares the relative ability of each Option to meet the evaluation criteria; and
7. identifies the relative ability of each of the Options to provide opportunities for restoring physical habitat and implementing other conservation strategies to address other important stressors in the Delta.

ATTACHMENT A

Conservation Element Bundle Evaluation Criteria

Biological Criteria

1. Relative degree to which the Option would reduce species mortality attributable to non-natural mortality sources, in order to enhance production (reproduction, growth, survival), abundance, and distribution for each of the covered fish species (BDCP Conservation Objective).

2. Relative degree to which the Option would provide water quality and flow conditions necessary to enhance production (reproduction, growth, survival), abundance, and distribution for each of the covered fish species (BDCP Conservation Objective).

3. Relative degree to which the Option would increase habitat quality, quantity, accessibility, and diversity in order to enhance and sustain production (reproduction, growth, survival), abundance, and distribution; and to improve the resiliency of each of the covered species' populations to environmental change and variable hydrology (BDCP Conservation Objective).

4. Relative degree to which the Option would increase food quality, quantity, and accessibility (e.g., phytoplankton, zooplankton, macro-invertebrates, forage fish) to enhance production (reproduction, growth, survival) and abundance for each of the covered fish species (BDCP Conservation Objective).

5. Relative degree to which the Option would reduce the abundance of non-native competitors and predators to increase native species production (reproduction, growth, survival), abundance and distribution for each of the covered fish species (BDCP Conservation Objective).

6. Relative degree to which the Option improves ecosystem processes in the BDCP planning area to support aquatic and associated habitats (BDCP Conservation Objective).

7. Relative degree to which the Option can be implemented within a time-frame to meet the near-term needs of each covered fish species (post BDCP authorization).

Planning Criteria

8. Relative degree to which the Option allows covered activities to be implemented in a way that meets the goals and purposes of those activities.

9. The relative feasibility and practicability of the Option, including the ability to fund, engineer, and implement. Relative costs (including infrastructure, operations, and management) associated with implementing the Option.

10. Relative costs (including infrastructure, operations, and management).

Flexibility/Durability/Sustainability Criteria

11. Relative degree to which the Option will be able to withstand the effects of climate change (e.g., sea level rise, changes in runoff), variable hydrology, seismic events, subsidence of Delta islands, and other large-scale changes to the Delta.

12. Relative degree to which the Option could improve ecosystem processes that support the long term needs of each of the covered species and their habitats with minimal future input of resources

13. Relative degree to which the Option can be adapted to address needs of covered fish species over time.

14. Relative degree of reversibility of the Option once implemented.

Other Resource Impacts Criteria

15. Relative degree to which the Option avoids impacts on the distribution and abundance of other native species in the BDCP Planning Area.

16. Relative degree to which the Option avoids impacts on the human environment.

17. Relative degree of risk of the Option causing impacts on sensitive species and habitats in areas outside of the BDCP Planning Area.